



August 27, 2009

Mr. Richard Stalker
Compliance Environmental Manager
Florida Department of Environmental Protection
400 North Congress Avenue, Suite 200
West Palm Beach, FL 33401

RECEIVED

SEP 01 2009

**DEPT of ENV PROTECTION
WEST PALM BEACH**

Re: S5-A Boat Ramp Mitigation
DEP Permit No. 50-0220536-001
ML Project No. 04-00114

Dear Richard,

The purpose of this letter is to submit the 5th Annual Monitoring Report for the S-5A Boat Ramp Mitigation project.

This report was prepared in accordance with the Florida Department of Environmental Protection (FDEP) Permit No. 50-0220536-001. The mitigation plantings were completed on November 22, 2004. The site visit was conducted on August 20, 2008 to collect data and make observations for the enclosed report. Overall the mitigation area is exhibiting excellent coverage by native species. Native coverage has increased from the previous monitoring event while nuisance/exotic species present is less than 1%.

This represents the 5th and final annual monitoring report as required by the above mentioned permit. The mitigation area has achieved its permitted success criteria and, therefore, the permittee requests a release from further monitoring requirements.

If you have any questions or require additional information, please call John Tessier or me at (561) 689-1138.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark E. Brandenburg".

Mark E. Brandenburg, C.E., P.W.S.
Associate, Environmental

MB/jt/mb
Enc.

cc: Marjorie Moore, SFWMD
Larry Fink, SFWMD

F:\PROJECTS\2005\05-00090 S5A Annual Mitigation Monitoring\Reports\5th Annual Monitoring Report\5YearCoverLtr_FDEP.doc

IMPROVING COMMUNITIES. CREATING ENVIRONMENTS.

Palm Beach Office: 2005 Vista Parkway • Suite 100 • West Palm Beach, Florida • 33411-2719
(561) 689-1138 • Fax: (561) 689-8108
www.millerlegg.com



August 27, 2009

Mr. Cameron Shaw
United States Army Corps of Engineers
PO Box 4970
Jacksonville, FL 32232-0019

Re: S5-A Boat Ramp Mitigation
USACOE Permit No. SAJ-2004-1059
ML Project No. 04-00114

Dear Cameron,

The purpose of this letter is to submit the 5th Annual Monitoring Report for the S-5A Boat Ramp Mitigation project.

This report was prepared in accordance with the United States Army Corps of Engineers Dredge and Fill Permit No. SAJ-2004-1059. The mitigation plantings were completed on November 22, 2004. The site visit was conducted on August 20, 2009 to collect data and make observations for the enclosed report. Overall the mitigation area is exhibiting decent coverage by native species. Native coverage has increased from last year while nuisance/exotic species present is less than 1%.

This represents the 5th and final annual monitoring report as required by the above mentioned permit. The mitigation area has achieved its permitted success criteria and, therefore, the permittee requests a release from further monitoring requirements.

If possible we request that a read receipt from your office be emailed to jtessier@millerlegg.com to verify that you have received this monitoring report. If you have any questions or require additional information, please call John Tessier or myself at (561) 689-1138.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mark E. Brandenburg', written over a faint, larger blue outline of the signature.

Mark E. Brandenburg, C.E., P.W.S.
Associate, Environmental

MB/jt/mb

Enc.

cc: Marjorie Moore, SFWMD
Larry Fink, SFWMD

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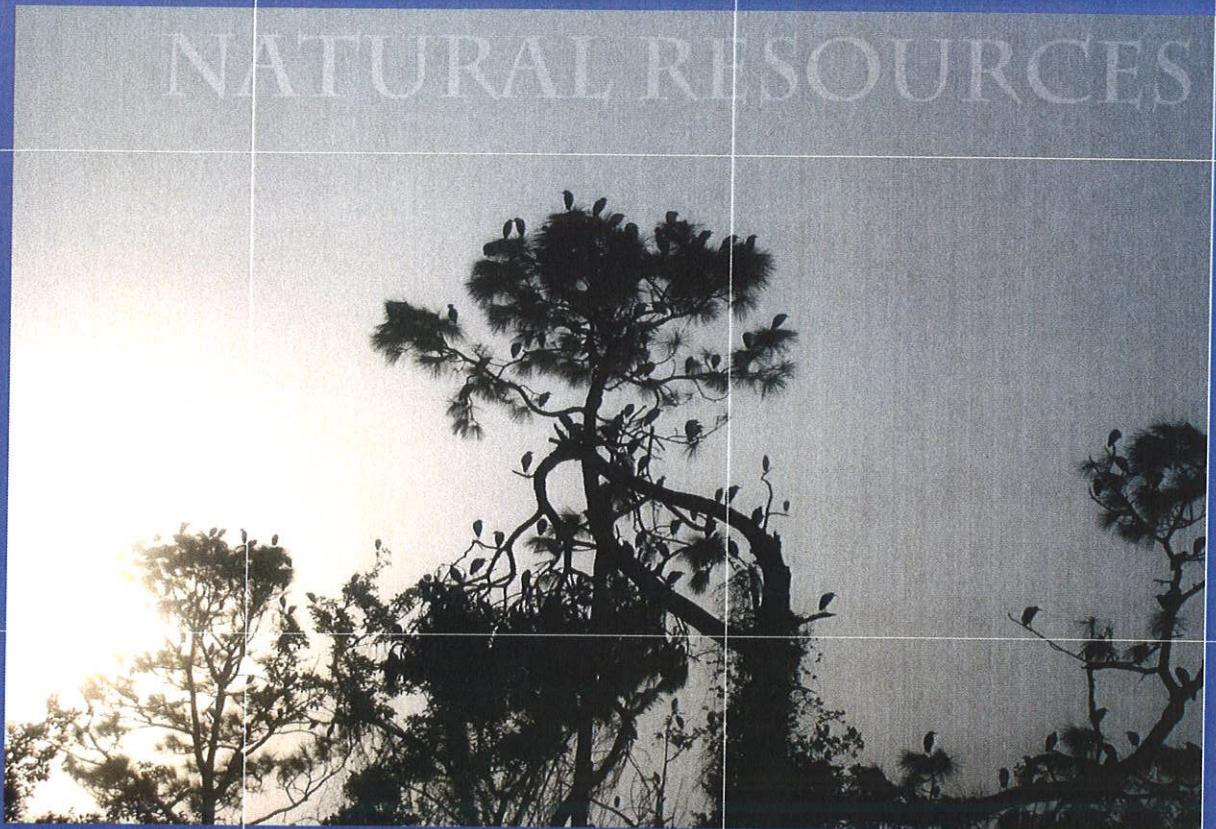
www.millerlegg.com

John Tessier

From: Shaw, Cameron S SAJ [Cameron.S.Shaw@usace.army.mil]
Sent: Wednesday, September 02, 2009 2:02 PM
To: John Tessier
Subject: 2004-1059 S5A Boat Ramp

This is to confirm that the 5th annual monitoring report has been received on the above referenced project.

S-5A BOAT RAMP MITIGATION AREA



*"Improving
Communities ...*

*... Creating
Environments"*

**5th Annual Monitoring Report
August 2009**

**ERP Permit #50-0220536-001
USACOE Permit #SAJ-2004-1059
Miller Legg Project #05-00090**

Prepared for:
South Florida Water Management District

**S-5A Mitigation Monitoring
5th Annual Monitoring Report**

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- USACOE Permit No. SAJ-2004-1059
- FDEP Permit No. 50-0220536-001
- **Permittee:** South Florida Water Management District **Consultant:** Miller Legg
3301 Gun Club Rd. 2005 Vista Parkway Suite 100
West Palm Beach, FL 33406 West Palm Beach, FL 33411
561-686-8800 Phone # 561-689-1138
- **Field Visit Information:** Reviewed on 8/20/2009 by John Tessier
- **Project Summary:** The S-5A boat ramp replacement project is located within unincorporated Palm Beach County, Florida. For this project, the Department of Environmental Protection (FDEP) and the United States Army Corps of Engineers (USACOE) required ±2.0 acres of onsite mitigation, which included marsh area planting and eradication of exotic/nuisance plant species.
- **Project Location:** The project is located south of Southern Boulevard, east of 20 Mile Bend, on the northern tip of the Arthur R. Marshall Loxahatchee National Wildlife Refuge within Section 6, Township 44S, Range 43E, in unincorporated Palm beach County, Florida (Figure 1).
- **Directions to Mitigation Site:** From Florida's Turnpike, go west on Southern Boulevard (US 441) for 13.6 miles to County Road 880. Turn left (south) on CR-880 and go over the bridge. Make the first left (east) after the bridge onto Twenty Mile Bend Boat Ramp Road. Continue to 0.9 miles and pass through the yellow gates, the mitigation area is on the right.
- **Mitigation Completion Date:** November 22, 2004
- **Compliance Status –** Native vegetation has increased significantly and nuisance coverage has decreased below the threshold.
 - Marsh
 - Desirable herbaceous plant coverage is at ±88% overall
 - Nuisance/exotic plant coverage is <1% overall
- **Date of Last Maintenance Activities:** 7/2009
- **Maintenance Recommendations:** No nuisance/exotic species were observed within the mitigation area. However, nuisance/exotic species, such as Burma silk reed (*Neyraudia reynaudiana*) and castor bean (*Ricinus communis*), were noted in the uplands surrounding the mitigation area. These areas should be closely monitored to prevent the spread of the nuisance/exotic species into the mitigation area during the dry season.

II. Requirements

- Permit Success Criteria
 - A minimum of 80% coverage by desirable wetland species after two (2) years and a demonstration of persistence for three (3) additional years.
 - Less than 5% coverage by invasive exotic and undesirable species is allowable if plants are dispersed and not concentrated in any particular area. Exotic and undesirable species include, but are not limited to melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casuarina equisetifolia*), Brazilian pepper (*Schinus terebinthifolius*), bishop wood (*Bischofia javanica*), torpedo grass (*Panicum repens*), primrose willow (*Ludwigia peruviana*), and cattail (*Typha* sp.). Treatment efforts must be tailored to prevent these species from becoming reproductively mature.
 - A minimum of 80% survival of each planted species. This rate shall be maintained each quarter except where species composition, density of planted and recruited species and overall wetland condition, growth rates and viability of the areas, are of higher quality, as determined by the regulatory agencies.
 - Hydrologic conditions and soil characteristics are in general conformity to those specified in the plans. Data from the permanent surveyed staff gauges must be collected every two weeks and submitted with the quarterly monitoring reports.
 - Any preserved/planted species shall be maintained as to exhibit new growth and/or propagation, viability, and overall health.

Table 1. Success Criteria Evaluation.

Success Criteria	Percent Coverage/Survivorship per Monitoring Period (for Entire Site)					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
80%+ Hydrophyte Cover.	8.3%	51.5%	64.5%	67.4%	68.5%	88.4%
<5% Invasive/Ex. Cover.	0%	3.5%	2.4%	1.1%	<1%	<1%

TABLE 1

S5-A Mitigation - 5th Annual Monitoring Report, August 20, 2009
Quadrat Data and Mean Percent Coverages

SPECIES	COMMON NAME	TRANSECT 1 QUADRAT 1	TRANSECT 1 QUADRAT 2	TRANSECT 1 QUADRAT 3	TRANSECT 1 QUADRAT 4	TRANSECT 1 QUADRAT 5	TRANSECT 1 QUADRAT 6	TRANSECT 1 QUADRAT 7	TRANSECT 1 QUADRAT 8	TRANSECT 1 QUADRAT 9	TRANSECT 1 QUADRAT 10	MEAN
<i>Acrostichum danaeifolium</i>	leatherfern											0.0
<i>Ambrosia artemisiifolia</i>	common ragweed											0.0
<i>Ammania coccinea</i>	toothcup											0.0
<i>Andropogon virginicus</i>	broomsedge										5	0.5
<i>Baccharis hamifolia</i>	salt bush		20									0.0
<i>Bacopa monnieri</i>	water hyssop											2.0
<i>Bidens</i> sp.	Spanish needles									15		1.5
<i>Canna flaccida</i>	yellow canna											0.0
<i>Centella asiatica</i>	coinwort											0.0
<i>Chara</i> sp.	muskrass											0.0
<i>Chrysobalanus icaco</i> (seedling)	cocoplum											0.0
<i>Cladium jamaicense</i>	sawgrass	20	15	75			15	12	7	35		0.0
<i>Conoclinium coelestinum</i>	mistflower											17.9
<i>Crinum americanum</i>	swamp lily											0.0
<i>Cyperus</i> sp.	sedge											0.0
<i>Dactyloctenium aegyptium</i>	crow foot grass											0.0
<i>Dichromena colorata</i>	star rush											0.0
<i>Echinochloa</i> sp.	barnyard grass										7	0.7
<i>Eclipta alba</i>	false daisy											0.0
<i>Eleocharis cellulosa</i>	spikerush					3	55	25				0.0
<i>Eleocharis geniculata</i>	spikerush								55	7		14.5
<i>Eleocharis intersticta</i>	spikerush											0.0
<i>Erigeron</i> sp.	daisy fleabane											0.0
<i>Flaveria linearis</i>	yellow top		3		3							0.0
<i>Fuirena pumila</i>	dwarf umbrella-grass											0.6
<i>Hydrocotyle umbellata</i>	marsh pennywort		5								3	0.3
<i>Iris hexagona</i>	southern blue flag											0.5
<i>Juncus effusus</i>	soft-rush				10							0.0
<i>Lachnocaulon</i> sp.	bog buttons										25	3.5
<i>Lippia nodiflora</i>	capeweed											0.0
<i>Ludwigia repens</i>	red ludwigia	7			20		7					0.0
<i>Ludwigia</i> sp.	water primrose											3.4
<i>Mitreolola petiolata</i>	stalked miterwort											0.0
<i>Nymphaea odorata</i>	fragrant water lily											0.0
<i>Panicum hemitomon</i>	maidencane					15						0.0
<i>Panicum</i> sp.	red top grass		5	5								1.5
<i>Phyla nodiflora</i>	frog fruit						12				7	2.9
<i>Pluchea</i> sp.	tleabane						15				15	1.5
<i>Polygonum hydropiperoides</i>	smartweed											0.0
<i>Pontederia cordata</i>	pickereelweed					20			7			0.7
<i>Proserpinaca pauciflora</i>	mermaidweed							35		25		8.0
<i>Rhynchospora</i> sp.	beakrush		2	3								0.0
<i>Sagittaria lancifolia</i>	duck potato	70	45	7	55			5	15	7	35	4.0
<i>Sagittaria latifolia</i>	arrowhead											20.4
<i>Saururus cernuus</i>	lizard's tail											0.0
<i>Scirpus</i> sp.	bulrush											0.0
<i>Stenotaphrum secundatum</i>	St. Augustine grass											0.0
<i>Tripsacum dactyloides</i>	Fakahatchee grass											0.0
<i>Thalia geniculata</i>	fireflag							25				0.0
												2.5
												0.0
												0.0
												0.0
	TOTAL	97	95	90	91	90	74	77	84	89	97	88.4
EXOTIC/NUISANCE SPECIES												
<i>Ludwigia peruviana</i>	primrose willow											0.0
<i>Panicum repens</i>	torpedo grass											0.0
<i>Typha</i> sp.	cattail											0.0
<i>Vigna luteola</i>	cowpea											0.0
<i>Alternanthera philoxeroides</i>	alligator weed											0.0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0.0
Non-vegetated/Debris												
	TOTAL	3	5	10	9	10	26	23	16	11	3	0.0
		100	100	100	100	100	100	100	100	100	100	100.0

S5-A MITIGATION AREA
5th Annual Monitoring Report – August 2009



Photo1 – East end of transect, facing south.



Photo 2 - East end of transect, looking west.

S5-A MITIGATION AREA
5th Annual Monitoring Report – August 2009



Photo 3 – East end of transect, looking north.



Photo 4 – View from west end of transect, looking east.

S5-A MITIGATION AREA
5th Annual Monitoring Report – August 2009

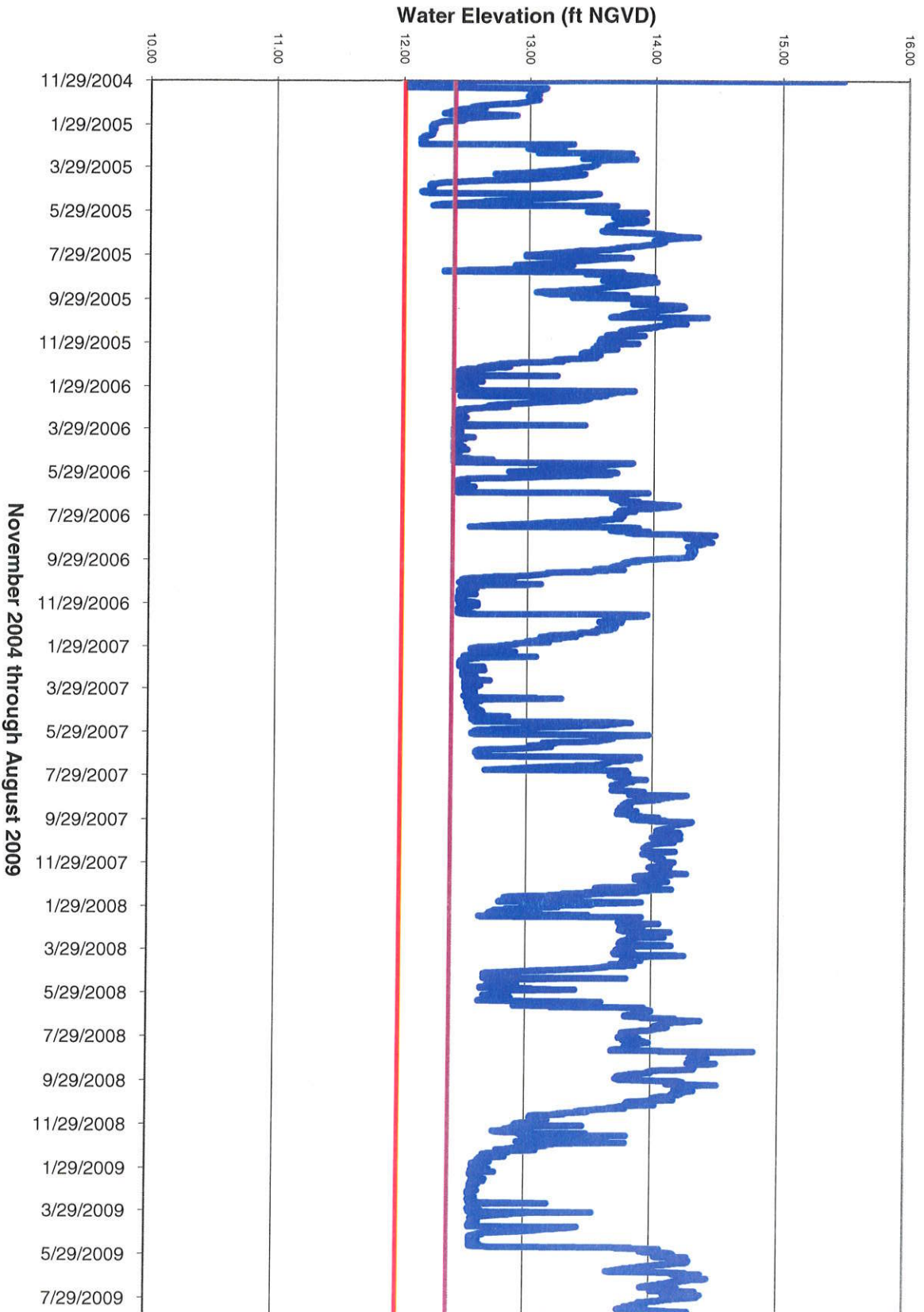


Photo 5 – West end of transect, facing northeast.



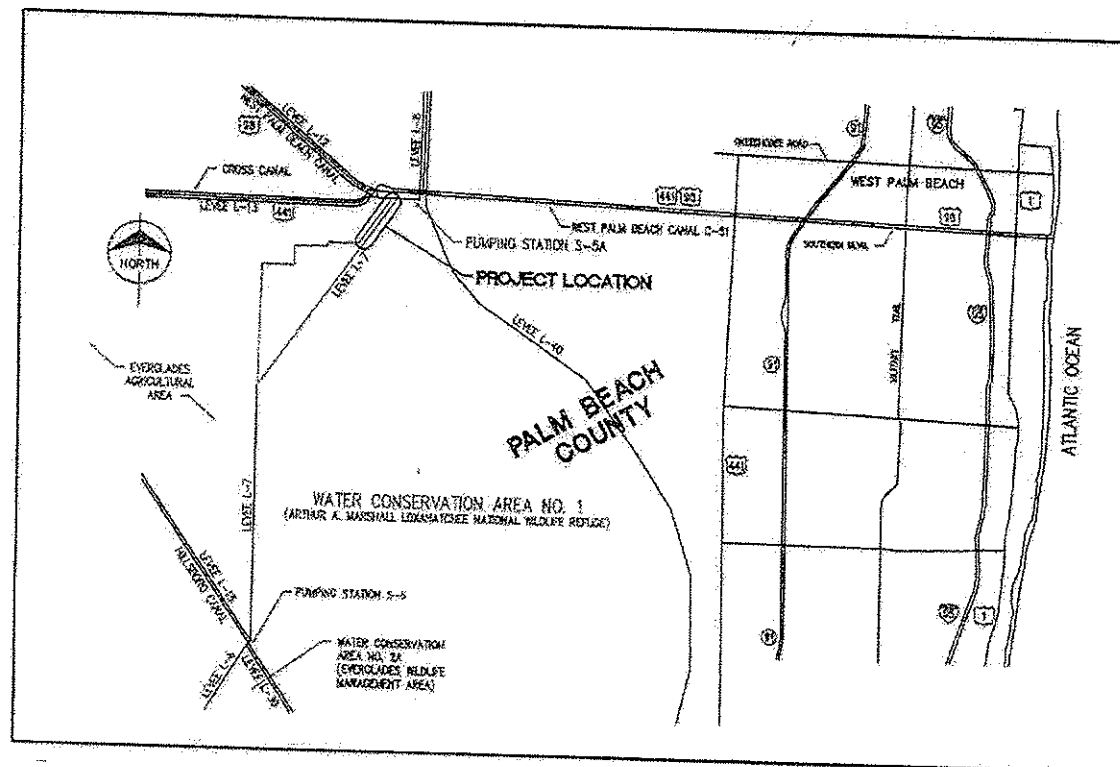
Photo 6 –West end of transect looking south.

S5-A Boat Ramp Mitigation Area 5th Annual Monitoring Report Hydrograph Data

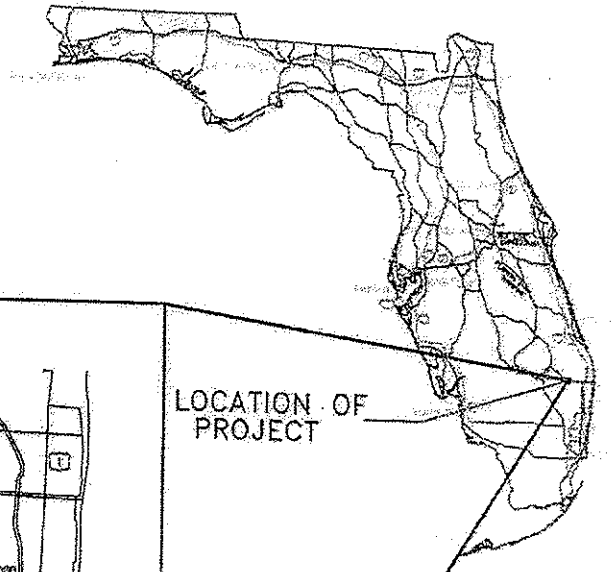


V:\Non-Project\Environmental\S5A\03-00125 Permit Sketches.DWG Tue 10/14/2003 10:19a By adpiaro

MITIGATION PERMIT SKETCHES



LOCATION OF PROJECT



SECTION 5, TOWNSHIP 44, RANGE 40

LOCATION MAP
N.T.S.

NOTES

PERMIT SET - REVIEW
CONSTRUCTION LEVEL
SPECIFICATIONS PRIOR TO
COMMENCING CONSTRUCTION
ACTIVITY

S5-A BOAT RAMP REPLACEMENT



1000 S. Douglas Ave., Suite 200
Tampa, FL 33606
Tel: 813/281-1111
Fax: 813/281-1112

03-00125

LOC-1

SOUTHERN BLVD.

C-51 CANAL



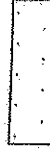


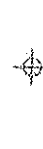
20 MILE BEN

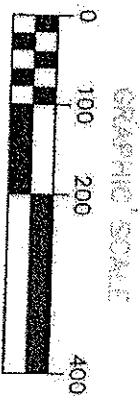
EXISTING MAINTAINED UPLAND AREA

EXISTING ACCE

S.F.W.M.D.
RESEARCH
COMPOUND

LEGEND:

-  EXISTING MARSH (± 1.6 ac.)
-  WETLAND IMPACTS (± 0.3 ac.)
-  MARSH CREATION (± 2.0 ac.)
-  TRANSECT
-  PHOTO STATION
-  STAFF GAUGE/PIEZOMETER



(IN FEET)
1 INCH = 200 FEET

S5-A BOAT RAMP REPLACEMENT

03-00125
CON-1

03-00125
CON-1

VI. Conclusions

Coverage by desirable, native hydrophytes within the marsh area has increased to $\pm 88\%$, a significant increase from the $\pm 69\%$ observed in December 2008. This increase is attributed to recent rainfall and the previous monitoring event being performed during the dry season rather than wetter months. Installed plants appear to exhibit new growth and continue to recruit naturally. Species present in relatively high abundance include spikerush (*Eleocharis cellulosa*), sawgrass (*Cladium jamaicense*), and duck potato (*Sagittaria lancifolia*). No nuisance species were recorded within the transect and only negligible patches of primrose willow (*Ludwigia peruviana*) were observed in the mitigation area. The previously treated castor bean and silk reed persists mainly in the far eastern edge of the upland outside mitigation area. Continued treatment is recommended as it will continue to prevent further encroachment of these species into the area. Efforts to eliminate these nuisance species will be made as maintenance personnel will be notified of the problem areas.

The wetland community has had time to establish itself and as a result is providing additional habitat for various wildlife species. Some incidental wildlife observations include; raccoon (*Procyon lotor*) tracks, great blue heron (*Ardea herodias*), crayfish (*Procambarus* sp.), marsh rabbit (*Sylvilagus palustris*), loggerhead shrike (*Lanius ludovicianus*), killdeer (*Charadrius vociferus*), least sandpiper (*Calidris minutilla*), osprey (*Pandion haliaetus*), mockingbird (*Mimus polyglottos*), and black vulture (*Coragyps atratus*).

Overall the mitigation area appears to be doing very well. The nuisance/exotic concerns on the east side of the mitigation area has improved considerably and desirable herbaceous wetland vegetation limits the space available for future establishment of nuisance/exotics species. Desirable herbaceous species are providing excellent coverage throughout the mitigation area and should continue to increase as more desirable species become established.

This monitoring report represents the 5th and final annual monitoring report required by USACOE Permit No. SAJ-2004-1059 and FDEP permit No. 50-0220536-001. The mitigation area has demonstrated continued success for the last 4 monitoring reports and it is our belief that it will continue to be successful in the future. Therefore, the permittee requests a release from any future monitoring requirements of the aforementioned permit.